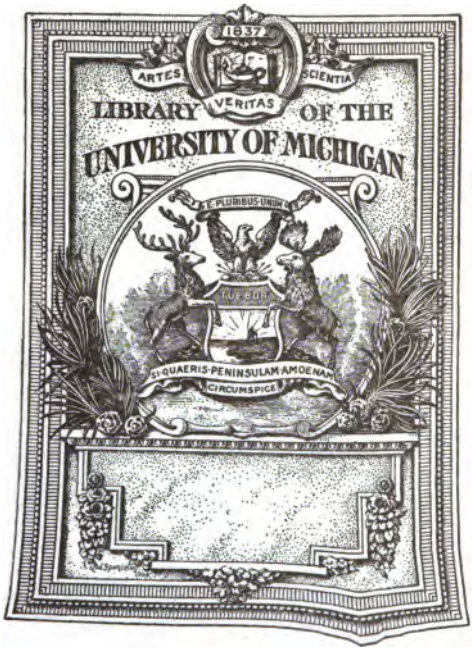
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DIET

OF

Infants and Young Children,

BY

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PREFACE.

The care of infants and young children falls, too often, upon hearts and into hands which, however willing, are yet but slightly educated for the work. Few mothers, indeed, are able, without professional advice, to do as they would for the welfare of their precious charges.

The proper *feeding* of the little ones, especially when the maternal supply prematurely fails, as happens with the majority of American mothers, is the most vital problem of all. To aid in its solution this little book is offered them by their sincere friend,

THE AUTHOR.

1706 GREEN STREET, PHILA.,
May 1st, 1882.

INTRODUCTORY.

General Principles of Feeding.

MAN thrives by good food; but wherefore? And if he do not thrive on a given food, wherefore, again? And how may he correct the error?

Prof. Liebig has laid the world under lasting obligation, by demonstrating the scientific principles of nutrition—for plants, and in like manner for animals. From these principles, we derive our answer.

Successful feeding is based upon the recognition of the chemical nature, the albuminoid composition of the tissues and organs of the body to be nourished—this, first of all. This at once indicates nitrogenized, and particularly, albumen-like bodies as essential. Eggs are composed mainly of pure albumen, with oily matter; and so is milk, along with casein, or *cheesy* matter, and bone-forming salts of lime, &c.; both feed the muscles, brain, nerves, and other tissues forming the body. Meats consist of similar substances, the fibre being composed of an *albuminoid*, viz.:

fibrin. *Casein* is also an albuminoid. These all, by digestion, etc., develop into "peptones," and, thus become converted into blood-albumen which is the common food of all highly organized tissues, and tissue-cells. In the vegetable kingdom, the same bodies are found. Thus vegetable albumen is common; vegetable fibrin is called *gluten;* and vegetable casein, found in beans, peas, etc., is called *legumin;* all are nutritious. In the preparation of wheat, as white flour, we lose much of the valuable matters, which attach themselves to the under surface of the bran; particularly, phosphate of lime; but the hard tissues, teeth and bones, while needing the albuminoid, demand hardening matters also; principally this same phosphate of lime. All true food contains these; good meats contain an abundance; but white flour is poor, Graham flour being rich in this direction.

Furthermore, all nutrition and all life would fail, were our food to contain nothing but directly nutritious principles. As a condition of nutrition, and of all other vital functions, we need to add *force* or *energy;*—this must be supplied with the food, whereby, it takes the primary form of *animal heat.* Combustible matters, as fat, sugar, dextrine and starch, meet this requirement. True, other food, and even our own flesh, is combustible, as is soon seen in fevers; but it is wasteful so to use nitrogenized food; and the others, just named, composed largely of hydrogen and carbon, are needed, to this end.

Finally, a large amount of liquid is required in food, in

order that the chemical actions described may take place. Solids act together but slowly, or not at all. Four-fifths of the human body consists of water. Without fluids, therefore, nutrition fails.

ONLY THE PUREST WATER must be used for food and drink. Hard water is made soft by boiling, which precipitates its carbonate of lime Well-water is apt to be injured by the drainage of soil-impurities into it, and no well is safe, if it be shallow, or dug in loose soil, or located near out-houses, or slop-receptacles, or any kind of refuse. Ponds and running streams which are exposed to such contamination are likewise to be condemned for the sake of both man and beast. Typhoid fever, diphtheria, and other diseases are often propagated by such waters, and this, boiling fails to prevent Filtering removes only visible faults. Chemical purifiers may answer for the washtub, but not for mankind; they act as drugs. The water he uses must be originally pure.

The child, as father of the man, has like needs. At the same time, it is comparatively unable to resent an error, or to make known its wants. Thus is devolved upon its parents and friends the duty of choosing for it, as intelligently as may be.

DIET

OF

INFANTS AND YOUNG CHILDREN.

BEYOND all other diet for infants, is unquestionably that afforded by the healthy, good-tempered mother; next to which is that of a good wet-nurse. Such is the unvarying verdict of all experts in pædology. It requires but to be stated; only, a healthy, happy-minded nurse, is better than a sickly, nervous, fretful, ill-nourished mother; and a mother's fit of passion (or that of a wet-nurse), may even destroy the life of the infant, if it be nursed soon after.

In multitudes of cases, the mother prefers to drag on in the misery of excessive nursing, risking even the welfare of her babe, rather than incur the ills of a new pregnancy. In not a few other cases, she honestly desires to nourish her child, even at the cost of her own emaciation. Sometimes,

the babe thrives, oftener it loses flesh, and is ravenously hungry most of the time; gaining, by its cries for food, the name of being "the crossest baby that ever lived." Its teeth are slow in appearing, are non-vital; its bones and flesh are soft; its digestion feeble; its nervous tissues morbidly irritable. Hot weather finds abundant prey amongst such infants; irritable brain and bowels, and any amount of toothache, or gumache, are their common experience; requiring, of course, *Gels.*, *Calc.*, *Bell*, *Cham.*, *Acon.*, &c., as medicinal measures, with change of air, bathing, aided by ice-rubbing of the gums, etc., etc.; but more than these, imperatively demanding a complete reform in the *dietetics* of the nursery.

But, whilst all concede this, there is a general vagueness of idea concerning its practical realization. Science and experience have, indeed, accumulated many data, but there is a too prevalent searching for some absolute routine of artificial nourishment, which, being contrary to nature's principle of individualization, must prove a mere will-o'-the-wisp, just as it does in therapeutics proper.

Within certain well-established scientific bounds, we must on the other hand remember that as "there is no accounting for tastes," so there is no such thing as safely ignoring the *instincts* and *appetites* of our little (and big) patients, if we would provide successfully for their nutrition. I therefore propose the following as a standard; as a practically available and always acceptable means of selecting the proper dietary for a given individual.

Firstly: However agreeable and nutritious any diet may be to-day, *rotation* of the bill of fare is sure to be required at some time; or disgust, indigestion, &c., will follow. Even the mother's milk supplies this need, because she is led by her own appetite to a sufficient variety, of which her suckling of course partakes.

Secondly: The food must be composite—nitrogenous as well as carbonaceous, to supply at once flesh, fat and animal heat. But these are to be variously proportioned, in divers cases.

Thirdly: A sufficient quantity of liquid must be allowed, in some form.

Fourthly: The food must not appear in the stools, undigested, nor be vomited. Quality or quantity, either one, may be in fault, and *must* be rectified. In this connection, let me say, the doctor should always demand a daily exhibition of the diapers. Children often die of indigestion, discovered only when they are moribund, perhaps; and that, too, when they have had but the mother's milk—abundant, agreeable even, but curdling in the intestinal transit; showing a good hue, but closely resembling chopped or curdled eggs; the mother daily testifying that the stools are perfect A temporary abstinence from the natural food, and substitution of pure cream or other nourishment, with the right medicine (not forgetting the mother), may often restore the babe to the breast in a few days. If even digestion be good, quantity may overdo its action; or

again, deficient supply may require to be supplemented artificially.

Infantile indigestion arises, as to the food itself, mainly from two sources, viz.: 1st. the starchy elements of farinaceous and other vegetable foods, all of which require mastication and an active saliva for their proper elaboration; both being lacking in infantile life; and 2d. the casein, or cheesy matter of milk, either of the mother, or of the cow, which requires much power in the stomach itself. An udder or breast which has been yielding its secretion during many months, finally forms a very cheesy milk, deficient in butter and sugar. A *healthy* child of the *same age* will thrive upon it, until it has cut its teeth for independent work, scarcely longer; but if sick, or if younger and not sick, it will surely fail to digest such milk, and will be injured by its use.

Amongst the artificial dietetics, we find some whose normal temperature is somewhat high, as MILK AND CREAM. As a *rule, food at the heat of the stomach itself is best suited* to this organ; and great harm may be done by neglecting to attend to this point. In other cases, easily distinguished, nature craves and must have cooler food.

Milk is the foremost on the list, even in its ordinary state. But for all that, babes have often starved to death on it, because not digesting it. To obtain the best results from its use, therefore, the preparation of it must be carefully managed according to individual

needs. Cummings' rules are useful here. It must be remembered that the main problem is to secure as much as possible of the oily, saccharine, and saline elements of the milk, whilst getting rid of the surplus of the principal digestive offender, the cheesy matter (casein, in which cow's milk exceeds the human, as 18 to 10,) the whole combined with the proper proportion of water, and sweetened; or better, with whey; thus resembling, as nearly as possible, human milk. To this end, the proportions must be varied to suit the age of the child.

1. Thus, the first step is to form the "milk stock," by one of the following equivalent methods, viz.: *a.* Separate and save, the *last half of the milking;* or,

b. Let the *whole* quantity milked be set aside four to five hours, allowing the cream to rise; then, separate, and save the *upper third* of the whole; or,

c. Mix *equal parts* of pure cream and new milk.

Sweeten and dilute to the standard of human milk, by adding as directed below, warm water, in which sugar of milk has been dissolved, $\frac{3}{4}$ ounce to the pint; or, common white sugar, one teaspoonful. Shake together strongly, in a perfectly clean jar—with a secure stopper. Add salt to taste. Phosphate of soda has a similar taste, and has been recommended by allopathic authority.

2. Keep in the same jar in a refrigerator.

3. When to be used, fill the nursing-bottle, and heat it (in a pan of water set upon a stove or lamp) until the bottle feels quite warm to the cheek—(about 100° F.).

4. For children of various ages, supposing all to be equally vigorous (?), the proportions of water may properly be varied, as follows:

Age.	*Milk*	*Water.*	*Daily Total.*
2 to 10 days,	$1\frac{1}{4}$ teacupfuls	to $3\frac{1}{4}$ teacupfuls,	$4\frac{1}{2}$ teacupf's.
10 " 20 "	$1\frac{3}{4}$ "	" $4\frac{1}{4}$ "	6 "
20 " 30 "	$2\frac{1}{2}$ "	" 6 - "	$8\frac{1}{2}$ "
1 " $1\frac{1}{2}$ mos.,	3 "	" $6\frac{3}{4}$ "	$9\frac{3}{4}$ "
$1\frac{1}{2}$ " 2 "	$3\frac{1}{2}$ "	" 7 "	$10\frac{1}{2}$ "
2 " $2\frac{1}{2}$ "	4 "	" $7\frac{1}{2}$ "	$11\frac{1}{2}$ "
$2\frac{1}{2}$ " 3 "	$4\frac{1}{2}$ "	" $7\frac{1}{2}$ "	12 "
3 " $3\frac{1}{2}$ "	5 "	" $7\frac{1}{2}$ "	$12\frac{1}{2}$ "
$3\frac{1}{2}$ " 4 "	$5\frac{1}{2}$ "	" $7\frac{1}{2}$ "	13 "
4 " $4\frac{1}{2}$ "	6 "	" $7\frac{1}{2}$ "	$13\frac{1}{2}$ "
$4\frac{1}{2}$ " 5 "	$6\frac{1}{2}$ "	" $7\frac{1}{2}$ "	14 "
5 " 6 "	7 "	" 7 "	14 "
6 " 7 "	7 "	" 7 "	14 "
7 " 8 "	8 "	" 6 "	14 "
8 " 9 "	$8\frac{1}{4}$ "	" 6 "	$14\frac{1}{4}$ "
9 " 10 "	$8\frac{1}{2}$ "	" 6 "	$14\frac{1}{2}$ "
10 " 11 "	$8\frac{3}{4}$ "	" $5\frac{3}{4}$ "	$14\frac{1}{2}$ "
11 " 12 "	9 "	" $5\frac{1}{2}$ "	$14\frac{1}{2}$ "
12 " 15 "	$9\frac{1}{4}$ "	" $5\frac{1}{4}$ "	$14\frac{1}{2}$ "
15 " 18 "	$9\frac{1}{2}$ "	" 5 "	$14\frac{1}{2}$ "
18 or more,	10 "	" 5 "	15 "

A teacupful is equal to one gill.

The above procedure may be happily modified, if the re-

jected portion of the milk be treated with rennet, and the resulting WHEY be used to dilute the food, in place of common water. The advantage is evident; for all the *inorganic* constituents of the milk, the dissolved salts of iron, potash, soda and lime, &c., so essential to the growth and life of organic cells, and to the formation of bone, of teeth, of flesh, and of blood, are thereby utilized—a very essential point, indeed. Besides, the rennet contains pepsin, and the whey, by dissolving it, becomes a direct aid to general digestion. The artificial addition of sugar is also superseded, milk-sugar being abundant in this whey.

Again, in cold weather, or when the milk stands upon ice, the cream rises more slowly—and the rule is then to let seven, instead of four or five hours elapse, before gathering the upper third; or, after the shorter period, collect only the upper *fourth;* or better, set *five* quarts to separate, and save one-fifth; in either case, the proper quantity of diluting water or whey, is as above. If water be used, it should be slightly seasoned with salt. Very hard water is bad, but if the local supply be hard, the mixture of a small quantity of it with rain water will be harmless, and, including a desirable share of lime, may do good. The water is not to be boiled; but, after the food is put into the nursing bottle, this is to be warmed in hot water. After the teeth appear, the child will gradually take also, portions of ordinary food. As to the quantity of bottle-food proper at one time, simply avoid vomiting; limiting the amount given, by experience of the child's stomach capacity—say, for a

well developed infant of three months, give one to two teacupfuls, every 2 to 4 hours in daytime, only half as often at night If it be sick, with vomiting, give *small quantities* repeated at *short intervals*.

A very young babe should spend its whole time, when not feeding, in quiet sleep *on the bed*, which ought to be as *soft* as possible.

Amongst the special articles of diet, the first to be named is PURE CREAM. Warmed, diluted, and sweetened, or frozen, or *au naturel*, it is a grateful and nutritious substance in very many instances; sometimes a little laxative; and thus differing from the farinacea. If frozen, it is of course to be used only in very small portions, and to meet a definite craving of the patient—not a mere notion, but a real instinct, as in other cases of peculiar appetite.

But cream from the cow, as well as milk, is liable to dangerous contamination by the weeds of the pasture; drinking from muddy pools also spoils it, as does milking the animal in foul stables, or without cleansing the teats and the hands of the milker. The product should, if possible, be carefully selected with reference thereto * How many indigestions, colics and diarrhœas come by that channel, who can tell?

Cream which is illy separated from the milk has often the same fault of indigestibility and consequent coagulation

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* See a pamphlet on "Tainted Milk," published by the "Canfield Condensed Milk Co.," Phila.

in the primæ viæ, with milk itself. Even pure, rich cream may prove unacceptable, causing vomiting; when, by adding warm water (for new-born children, four parts of water to one of cream, with a little white sugar, or sugar of milk), it may do quite well. But the whole stock of cream ought not to be diluted at once, since the process of putrefaction is thereby favored. In summer, it should be preserved on ice in vessels of fastidious cleanness. If gastric irritability be marked, *very small quantities* of this or any other nutriment are to be given at any one time, but frequently, as the organ will bear without vomiting or disgust; say a teaspoonful every half hour. In some rare cases, the rectum may supersede the stomach as the receptacle of food—of which, yolk of eggs with cream is probably the best form, two tablespoonfuls being injected every two to four hours, for a little child. Nutrition may be maintained through many days in this manner.

But the other components of cow's milk may sometimes be separately utilized. The *curd*, separated by rennet, sweetened, or even, for older persons, the well-known "schmier kaas," or cottage-cheese, with cream and salt, and possibly pepper, may prove acceptable and digestible in small quantities in case of general loathing. *Whey*, the curd removed, being the residuum after treatment by rennet, contains the sugar and salts of milk, and is by no means valueless as a semi-nutritious and bland, broth-like fluid, when only such things can be borne, or as a diluent

of milk. It is also a fine *anti-dyspeptic beverage.* "*Curds and Whey*," sweetened, is tolerably digestible.

Into all these preparations, we may presume that there enters a certain quantum of modified pepsin of the rennet, which may be expected to exert a happy catalytic influence upon the stomach, and its other contents, whatever they may be. As for themselves, being already half-digested by the same agent, they are more manageable by the enfeebled organs, than the original milk.

The universal voice of the profession is for *the milk of one cow.* Very well, if the milk be young, and the milkman honest. (?) By young milk, it is meant that the calving of the animal is recent. Sometimes, the milk of one locality proves hurtful, that of another, beneficial. Seashore milk I have generally found particularly good. Young cows are also preferable.

As a remedy in dropsical cases, *skim-milk* has some empirical reputation; and in phthisis, &c., a wineglassful at bedtime will often prevent night-sweat; but repeated too frequently, its effects cease to be satisfactory.

Asses' Milk is probably the most nearly normal of all substitutes for that of the mother; but the comparative rarity of this creature in America renders it more a matter of curiosity to us than otherwise. In any case, whether of choosing a wet-nurse, or a cow, or any other animal, as the source of an infant's food, the age of the secretion should be *less than that of the babe.* That is to say, for instance, that a cow with a calf one month old may do very well to feed a

child of six or nine months. An older udder, on the other hand, may but add to the causes of inanition. Whenever the casein transcends in proportion the powers of digestion, as often occurs with an old secretion, even of the mother, mischief is inaugurated forthwith. The cure lies in its rejection by the wary physician and nurse; with perhaps a little medication.

In this country, the most common substitute for the mother's milk, next to that of the cow, is *goat's milk*. A young secretion bears a fair resemblance to good human milk, and more frequently agrees with even a sick infant than the best selected cow's milk, supposing it to be used entire, as, if the digestive powers be good, it may indeed sometimes be, especially in children who have acquired some general tone; of which, the forwardness of dentition is a pretty good criterion.

Whatever the form of milk used, let it never be forgotten that the diapers are the final test of results, and coagula of casein a sufficient condemnation of the article in use, as a present diet for that particular patient, which no amount of *dilution* can set aside. A little added gruel, or gelatine may, however, remedy this, since it renders the resulting curd fine, flaky, and digestible. It may well be used just *before* the milk, a teaspoonful being sufficient.

Condensed milk is now so common in commerce as to have become an important substitute for the recent article. Sufficiently diluted, it is certainly better than the latter, injured, as it so often is, by the vicissitudes of the hot season.

Its character must, however, depend upon exactly the same considerations with ordinary milk. Careful selection and preparation have indeed now rendered it invaluable.* It is sold in two forms, viz.: the "condensed milk," proper, a dense liquid, five times the strength of new milk, an excellent article, of daily supply only in large cities; and the "preserved milk," which is the same thing, with the addition of pure white sugar, each pound containing five ounces of the sugar; this is commonly sold as canned milk.

Of this, the "Anglo-Swiss Condensed Milk Company," advise the administration as follows:

"For the *first two days* give nothing but sweetened water: for the next five days a half tea-spoonful of condensed milk with eight tea-spoonfuls of water every two hours, day and night.

"For the *second week:* ¾ teaspoonful of condensed milk with 12 teaspoonfuls of water, every two hours, day and night.

"*Third week:* one teaspoonful of condensed milk with 16 teaspoonfuls of water, every two hours, day and night.

"*Fourth week:* 1¼ teaspoonfuls of condensed milk with 18 teaspoonfuls of water, every two hours, day and night.

"*Second month:* 1½ teaspoonfuls of condensed milk with 21 teaspoonfuls of water, every two hours by day and two to three hours at night.

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* See pamphlet on its mode of manufacture, published by the Canfield Condensed Milk Company, of Philadelphia.

"*Third month:* 2 teaspoonfuls of condensed milk to 24 teaspoonfuls of water, every two hours by day and about once in three hours at night.

"The spoon used for measuring condensed milk should not be dipped into the tin, but should be filled by pouring from another spoon.

"If the use of condensed milk exclusively be continued beyond the third month, begin the fourth month with 2 to 2½ teaspoonfuls of condensed milk to 24 teaspoonfuls of water, and gradually, during the fourth month, increase the amount of condensed milk to 3 teaspoonfuls, with 24 to 26 teaspoonfuls of water, or with an amount of water equal to the volume the child will take at one time, and at this age feeding at longer intervals may gradually take place.

"By the fifth month experience will usually show how to proceed, but condensed milk for any child of any age should never be used richer than one part of milk to 7 parts of water.

"The milk should always be prepared immediately before using, and all possible care should be taken to keep feeding bottles clean and sweet. They should be cleansed each time immediately after having been used.

"The water should be previously boiled and cooled. In preparing the diluted milk do not boil it, but merely warm it to blood heat, about 100 degrees Fahrenheit."

The experience of physicians agrees generally with the foregoing advice.

The Canfield Condensed Milk Company, at my urgent

request, have undertaken to prepare a special form of the article, viz.: "Condensed Young Milk," or canned milk, exclusively from cows whose calves are between two weeks and three months old. All the products of this company (*Osprey* brand) being of the best, I habitually prescribe them.

In extreme cases, a swab or teat of linen may be dipped repeatedly into cream, or any chosen fluid, and the child permitted to suck it. Even the well known "sugar teat" (white sugar tied up in a piece of linen), with all the fear of "swallowing wind," swallowing the rag, etc., etc., which limits its use, is an occasionally valuable method of conveying nourishment; and may contain other things besides sugar, suited to the purpose. The teat should have a large fringe, to prevent its being drawn too far into the babe's mouth.

Butter is too much a bug-bear to those who feed young children. It is calorifacient, palatable when good, and usually digestible.

Buttermilk should not be forgotten. If sound, it may be of use in low conditions of the digestive system. It has been beneficially added to rice-flour gruel.

Many other articles of the infant's diet list require for preparation the aid of milk, in some form or other. Its excellence is therefore a matter of prime importance, in a very large number of cases.

Next to these, we naturally consider the substances known

as FARINACEOUS. And first of these, the *starches*, viz.: arrow root, tapioca, sago, *tous les mois*, salep, corn-starch.

These hydro-carbons are calorifacient alone, and are useful, but are utterly without value in nutrition of the azotized tissues, except so far as to supersede the undue combustion and waste of these in the process of calorification. Many fatal cases of marasmus have been traced to an exclusively starchy diet. They do, however, maintain animal heat, besides serving to charge with energy the digestive glands. They also allay the sense of emptiness and hunger, when other food cannot be taken. The same may be said of SUGAR *in every form*, including honey, molasses, rock candy, "gum drops," etc. A dash of tea or coffee, in warm diluted and sweetened milk (commonly called "cambric tea,") may have a more positive influence against waste, in some cases; supposing them medicinally unobjectionable.

MUCILAGES, as of gum arabic, or Irish and Iceland mosses belong to the same category with starch and sugar; barring the iodine of the Irish, and bitterish *cetrarin* of the Iceland moss. They are prepared by steeping either in cold, or better, in hot water; sugar or rock candy being added, if desired. Such articles form good palliatives in cough.

GELATINE, as jelly, with or without wine, is comparable with the starches and mucilages. As a constituent of soup, prepared by boiling a young shin-bone of beef (not wholly devoid of meat-fibre), it is very valuable. Pearl barley, or rice, may often be added with advantage. So also, vegetables; which, for a young child, should be strained out.

VEGETABLE SOUP itself may be mentioned here. It is composed of all the ordinary market vegetables, in their season, so far as convenient; made into a decoction, and strained. Out of season, canned, or desiccated vegetables may answer. Straining removes indigestible particles, and so obviates disturbance of the stomach and bowels. Even in typhoid fever, it agrees well.

In the preparation of these, and in all other sick-cookery, so far as can be, non-metallic surfaces only should be allowed in contact with the materials used. A simple method is to put them into an ordinary bowl, setting this into a saucepan of water, and covering the bowl with a saucer; (the "water-bath.") The water in the saucepan is made to boil; and thereby, the food is duly cooked. If higher heat be required, a pan of sand (the "sand-bath,") may take the place of the saucepan of water. Miss Beecher favors the universal use of *salt* in cooking.

The Germans prepare soups of many things not so used by Americans; and it may be well to learn from them.

MILK-SOUP, bread-soup, &c., may be said to be soup or porridge-like preparations of those substances, rather thin, and often none the worse for that.

SUET-SOUP is of the utmost importance in some wasting diseases. It takes the place of cod liver oil, in diseases of the lungs and bowels, with emaciation. It is thus made: one-quarter pound of fresh mutton suet, cut very fine, is boiled, in a quart of new milk of the best quality, down to a pint; all the free fat is skimmed from the top of this; and

when cold, it is ready for use. An adult will require a tumblerful with each meal. For infants and little children, a wineglassful, more or less, several times a day, according to appetite. It is sometimes greatly relished; if not, sweet butter may take the place of suet; or, even pure cream, alone, may answer in the same class of cases.

The inside of ROASTED POTATOES, perfectly done and mealy, prepared to suit the taste, say with butter, milk, or cream, and salt, will often prove good food if no contra-indication exist. As a general rule, all fruit and vegetables have a laxative tendency; but exceptions may occur; and a mealy roasted potato is as little objectionable as anything of the kind. Fricasséed, or steamed potatoes, prepared with "drawn butter" may sometimes do better, so far as delicacy of palate is concerned. Grated raw potatoes (using an uncontaminated grater), may be preferred for cooking, and easily become reduced to a liquid form.

Various CEREALS hold a high place as artificial diet. Maize, or *Indian-corn-meal*, apparently the crudest of all, may at times prove palatable.

Whole, cracked, or ground *wheat*, *barley*, *rye*, *oats*, *rice*, *beans*, *lentils*, *peas*, in soup-like, gruel, or porridge form, strained, or made into bread; and as to rice, the well-boiled grain, all are available, prepared with cream, butter, sugar, molasses, &c., according to choice. Rice-water, and barley-water are standard diet-drinks. Strained bean-soup has proved "just the thing" for a child convalescing from dysentery. The cooking is a matter of first-rate import-

ance. The common kidney-beans are to be soaked in cold water, over night, and boiled in the morning—adding no salt until nearly done, since this would harden the skin, and prevent the complete cooking of the interior of the bean. When the skins are nearly bursting, therefore, the salt is to be added The other articles require equal care, each in its way. Non-metallic vessels, and sometimes, cooking in the hot water bath—are necessary to good results.

There is always advantage, not only to the *nursing babe*, but also to the mother herself, in her consuming such foods as contain the most nutriment for the child; for she is thus enabled to supply its needs, without any severe drain upon her own body. Hence, good milk, beans, peas, lentils and bran bread, eaten by the mother, all of them being rich in albumen, or gluten, casein, and phosphates, are very sustaining to herself, as well as useful to her infant.

In like manner, *pregnancy* calls for the same kind of diet Persistent nausea, however, interferes with nutrition, and thus with the welfare of both mother and child, causing weakness, loss of teeth by softening, etc., to her, and retarding its development and diminishing its vitality. This can, and ought to be *cured*. Some physicians advise a vegetable and fruit diet, with a view to easy labor, the child's bones being made softer; but its health is apt to suffer after birth, from this policy.

"PREPARED FOODS" are now found on sale in considerable variety. The principles of their manufacture conform very well to the objects already mentioned; the purpose

being to preserve the nitrogenous and the earthy and saline constituents of the grain, and to "convert" the insoluble starchy matters into *soluble dextrine.* Some, too, made at a low temperature, retain the natural vegetable digester of starch, viz.: *diastase;* this being a constituent of the living grain, and much like ptyalin, from the human saliva, albuminoid in its nature, is distinctively digestive of starch, but is destroyed by intense heat. This kind is illustrated by *Maltine* and other "Extracts of Malt;" and they are to be regarded as *digestives*, quite as much or more than as foods, since they both favor the *activity* of the digestive glands, and assist in the direct solution of other nutriment.

The other kind are made at a high temperature, whereby the starch is forcibly changed. Under various names, all these are nearly the same. According to the former proprietor of *Hubbell's Prepared Wheat,* the process is essentially as follows: the grain, after threshing, being contaminated externally with a filmy silicious coating, is subjected to friction between two layers of wet canvas, to wash it off. It is then dried on webbing, with the aid of heat, afterwards ground into flour in the ordinary manner, and finely bolted. The first one-sixth bolted is what is termed "pastry-flour," used rarely by any but pastry-cooks, and consisting principally of the redundant starch; this is rejected. The whole remaining portion is then floured and finely bolted, as often as necessary; and sifted in a shallow layer upon unglazed earthen plates, on which it is baked twelve hours at a temperature of about 212°, which bursts

the starch granules, changes this to dextrine, and aggregates the layer into a firm mass. Finally, this is again floured and bolted. The product is a fine cream-colored flour, containing the normal quantity of albumen and gluten, a good proportion of disintegrated, dextrinized, hence soluble starch, and all the earthy matters, as Lime and Magnesia; along with the Iron, Manganese, Salines and Sulphur and Phosphorus; besides sugar and gum In relation to the bowels, it is anti-diarrhœic; should it constipate, cream reverses this.

Its preparation for use does not differ materially from that of other farinaceous diet, except that but little cooking is needed.

We have, then, two classes of the prepared grain foods. 1st. Those made at a low heat, that is, at or a little above the normal temperature of the human body; and 2d. Those made at a very high heat. Each has a usefulness of its own.

Of the foods (or digestives) prepared at low temperatures, the various American and German *malt extracts*, as before said, are examples. They are capable of aiding the digestion of other nutriment, in general, by charging with requisite energy, the digestive glands; and at the same time, of dissolving starch, by means of the diastase, or vegetable ptyalin, which they contain. The nursing mother, too, will find them of specific use, in furnishing her with a due amount of milk secretion, from her food.

The best type of these is Reed & Carnrick's Plain "*Mal-*

tine." It only is so prepared as to fulfil all requirements. (See pamphlet, published by this firm, New York.) This substance is rich in phosphates, as well as in diastase, is palatable, and unites the qualities of wheat, oats and barley. According to Prof. Attfield, it contains, of flesh-formers, nearly six per cent.; of bone-formers, one-third per cent.; of heat-producers, 70 per cent.—without any alcohol. Since young infants require much food of the calorifacient sort, this last proportion is particularly commendable. Maltine, however, is less used as a direct food than as a digestive ally.

Horlick's "*Extract of Malt*" is also commendable. It is made from Canada Barley Malt, macerated in water at 150° F., for three hours, afterwards percolated, and evaporated to *dryness*, forming a yellowish powder.

The following are prepared at a high temperature.

PREPARED WHEAT, barley, &c., are an extremely valuable class of dietetics. Blair, Moxey and others, in this city, and other parties elsewhere, manufacture large quantities of these. They are to be made up with cream and water, or milk.

Hubbell's Prepared Wheat, Blair's Wheat Food, and Moxey's Cerealina are nearly identical.

The last derives its name from the nitrogenous, digestive principle, named *cerealine*, contained in the grain. All of these substances present the nutritive matter in a favorable state for solution in the stomach after but little boiling, and also deprived, to a varying extent, of the cruder portion of the bran. Similar remarks apply to prepared barley, etc.

The "Health Food Company of New York," prepare a variety of new forms, of which the "*Universal Food*" is attested as most valuable for children. They also make "*Gluten Flour*," nearly free from starch, which is therefore exceedingly important in starch-indigestion, shown by *pasty stools*, after the use of common flour or meal.

"*Cold-blast*," or "*attrition flour*" is said to contain 98 per cent of gluten, and to be rich in phosphatic salts, the essentials of nutrition. Grinding and bolting are superseded, in its manufacture, by forcible striking against a hard surface by a cold blast, and by pounding. It has proved valuable.

"*Imperial Granum*," a very popular food for infants, is, according to the authority of the manufacturers, also a pure and simple wheat-gluten, extracted and solidified in granular form. Its use is the same with the other forms of gluten —or it may be given with milk.

"*Granula*" is another preparation, manufactured by Austin & Jackson of Dansville, New York, which appears to furnish the desiderata in grain-food, quite well, and to be a complete nutriment, even for the nursing mother.

"*Neave's Food*" is a competitor for favor, and is much esteemed by many. I have not tested it.

"*Ridge's Food*" is another of the same group, and contains carbonate of lime, artificially added. I prefer to find that substance in natural combination with the grain, included in the vital process of vegetable growth.

"*Mellin's Food*" is an imported English preparation of the same general class, and has proved satisfactory.

"*Horlick's Food*," which is an American product, is held in high esteem by many. It contains the bicarbonates of soda and potash, also artificially introduced. Wheat flour, and bran, with malt, form its cereal basis.

One more group of this class may be named here, viz.: the A. B. C. (*American Breakfast Cereals*); "steam-cooked" wheat, oats, barley and Indian corn. Special forms are named "Cereal Milk," "Cereal Cream," etc. Not only as direct food for infants, but for nursing mothers, also, they are all useful and important.

There is yet a list of common, but valuable foods.

Pearl barley is the crude article wholly deprived of bran by mutual friction of the grains during continued agitation in a revolving mill; without other change.

Farina, a well-known dietetic, is flour prepared from wheat which has been thus "pearled." Both of these consequently require long cooking in order to render their starchy constituents soluble. Moreover the pearling process is wasteful of the gluten and phosphates, so needful for the nutrition of muscle, bone, &c.; and which are largely removed, along with the bran. Boil with water, two hours. If milk be added, let it be only five minutes before taking off the fire, since it suffers by long cooking, in the coagulation of its albumen; and the necessary change of the starch in the meal is also counteracted by the same coagulum.

A very good preparation indeed may be improvised by an old-fashioned recipe. Any kind of flour may be tied up in a cotton bag, dry, placed in a vessel of boiling water, and subjected to a long subsequent boiling. The product is then reduced anew to powder, and may be kept at hand for use, in like manner; requiring less cooking than farina, etc. It is known as "*Boiled Flour*." It has some repute as a remedy in diarrhœa, given in the form of "pap."

Various agreeable dietetics, commonly used for dessert, may be made from farinaceous substances as food for the sick, and for young children. Plain puddings, and *blanc-mange* are examples. The manufacturers of "Cerealina," &c., give more or less explicit directions on their packages as to these.

Racahout is composed of arrow-root, salep (another starchy principle), farina, and sugar of milk, with cocoa; flavored slightly with vanilla. It is used as a nutritious drink, resembling chocolate in some degree. It is suited to nursing mothers and convalescents, as well as to some children.

It is perhaps unnecessary to say aught of the relative value of sucking-bottles, pap-spoons, &c., &c., as means of administering liquid food, as every mother soon finds out the easiest and best method, for herself. A word is however in place, as to the nursing bottle; a long tube is best, since with it, the babe readily sucks in the recumbent posture, and independently of help from others. In the administration of either food or medicine by a spoon, also,

caution is required. If poured upon the tongue of any person lying on the back, it is apt to partly pass out at the corners of the mouth, and partly to run into the larynx, causing choking. This accident must be avoided, both in infants and in other weak persons. The remedy is simple, viz : to pour the fluid down the upper lip and *roof* of the mouth ; swallowing is thus rendered easy, and the use of the spoon agreeable.

Absolute cleanliness of all the feeding appliances is a *sine qua non*. A little sour residue will vitiate all that it touches.

Hominy (Indian corn, deprived of its siliceous exterior by steeping in ley), if soaked in cold water over night, and subjected to long boiling, salted and dressed with butter, is a digestible as well as delicate dish. But for children, the smallest hominy, i. e., *Grits*, should be used; so also, in the case of convalescents generally. The thorough cooking of these is the condition of their digestibility. It should be done with earthen utensils.

" *Mush*," renowned in verse as " hasty pudding," or fine white Indian meal prepared by very long cooking, salted, and dressed with milk, butter, molasses, or sugar, is a well-known and very important dietetic, often too much overlooked.

The same sort of preparation of oat-meal, " oat-meal mush," is often preferred ; and rye-flour is equally in favor with others. Oat-meal is, to some, when used at supper, a positive laxative.

GRUELS of the same materials are familiar. Less known, are gruels made of *rice-flour* or *pulverized cracker*, or soda-biscuit. "Cracker-dust," ready-made for other purposes, may be employed conveniently for this, and produces a very good dietetic. Unbolted, or "Graham flour," may be used in like manner, thus securing a large amount of nutritious matter, in the way of gluten and phosphates, which are lost in preparing fine flour.

Bran-mush, well cooked, is often an acceptable dessert for the well, and may be dressed as suggested above; being, like other forms of bran-flour, laxative to the bowels. Thick, or thin like gruel, it may become a special diet for children.

Bran-bread, or Graham bread, is valuable for similar reasons, and is, like the other forms, in favor with dyspeptics who are constipated, on account of the mechanically laxative effects it exerts. So, also, *bran-crackers*. The same may occasionally be used for children, prepared in any of the forms in which ordinary bread and crackers may be given—of which, we shall have something to say directly.

Bran-bread-pudding consists of the crumbs of bran-bread, mixed with egg and sugar, according to taste; and over which has been poured boiling cream.

Rye-bread is suitable for rotation with other forms, or even as a main diet.

Plain panada is a primitive but often (when rightly made) very palatable diet. It should be prepared thus: remove the crust of a thick slice of baker's bread a day old, break it small into a hot bowl, sprinkle with sugar to

suit the taste, pour over this a liberal portion of cream or rich milk, and finally, enough *scalding hot* water to cover the bread; *chop* it rapidly with a silver butter knife until reduced to a fine, loose pulp, (never mash it with the side of the knife or spoon), and allow it to stand until cool enough to swallow, when it should be eaten.

Crackers, sweet or plain, or other kinds of biscuits, dry or soaked in water, or "cambric tea," buttered or not, are often invaluable.

Bread toasted, deprived of the crust, may be treated in a similar manner, and may prove serviceable if flatulence from decomposition of food, etc, be a symptom; and also for the mere purpose of rotation. But occasionally it causes such symptoms when not already present, probably in the character of *carbo vegetabilis*. The ordinary milk-toast, cream-toast, or water-toast, with butter, may often be utilized in the case of children.

Zweiback—(twice baked)—bread, of the kind called "rusk," or "tea-buns"—baked in slices, is susceptible of minute division with ease, and may be used somewhat like cracker-dust in a gruel form, or in panada or soups.

Ordinary *bread and butter*, *bread and gravy*, and the like, when moist, often afford a good nutriment for even very young children, as most mothers are aware.

"Aerated," or "*Unfermented bread*" and biscuit—i. e., that made of dough without yeast, but charged mechanically with pure atmospheric air—may be preferred when common bread sours on the stomach.

Sponge-cake, plainly made, is something which most children relish. A similar cake is "lady-fingers" Either of these may be given dry, or moistened, to almost any child, sick or well.

The youngest children, those who have no teeth, may be fed with comparatively strong food, if the mouth of a healthy person be employed to masticate it beforehand. The starchy part of bread, crackers, etc., is thus acted on by the saliva, and all substances perfectly comminuted before administration. Hence, a most important diet for a half-fed infant, sick or well, may often be found in *chewed cracker*, *chewed meat*, *etc.*

A child may, if not voracious, be satisfied by *sucking a cracker*, or a tough crust of bread, held to its mouth. The same may be said of meat cut into a strip, parallel with the grain, in order not to separate in chunks. But so brittle a substance as soda-biscuit should not be so used, lest, as I have witnessed, a small flake getting over the glottis, fatal suffocation occur. A teething child may often be aided by biting upon the leg-bone of an *old* chicken. Young bones are dangerous, because the *ends* often separate, and may choke it.

A peculiar article is now manufactured under the name of "*Milk Food*;" it is, however, a compound of bread-*crust*, which is the most soluble and nutritious part of the loaf, with super-condensed, *i. e. dried* milk. This powder, in the proportion of one part to ten of warm water, forms a proper food for infants of one to two months. Older babies re-

quire a double strength. There can be no doubt of the great value of the "Milk Foods," of which there are several in the market, viz.: that of the "Anglo-Swiss Condensed Milk Company," Nestlé's and Gerber's.* The last named is prepared in New York, the others are imported. Gerber's analysis is as follows:

	AVERAGE.		AVERAGE.	
Water	6.0	Carbo-Hydrates	50.0	70.0
Saline matter	2.5	Insoluble Carbo-Hydrates, including Cellulose	20.0	
Fatty "	6.0			
Albuminoids	15.0			

Of these constituents it will be noted, that the flesh forming albuminoids form 15 per cent., the calorifacient fats and carbo-hydrates 56 per cent.; while the salts perform a great part in causing the *assimilation* and appropriation of the food by the living body, and in bone-building.

Professor Hoffman of Germany, says, of these, "the milk foods have met with an enormous, and we can well say, justifiable consumption in Europe. They are of high keeping qualities. Even in an unclean place, in a dingy room, the milk food will not disintegrate; it will not turn sour." The mingling of milk with bread-crust tends also to prevent the massive coagulation of its casein in the stomach.

A special use of flour is suggested by a plan I once saw illustrated for the administration of Quinine and other

* See their pamphlets, respectively.

nauseous drugs. The process is as follows: A *batter* is made in the ordinary way; a *hot* smoothing iron being upturned, a little is poured upon the surface, and a second applied upon this, held a few moments so as to fairly bake it; it is then removed by a knife. A section of this wafer is placed on a teaspoon, suddenly dipped into water, drained, the substance to be given laid upon it, the edges folded over so as to enclose it, when it may be laid on the tongue and swallowed with a little water. Now it occurs to me that certain not very palatable but nutritious extracts may be given to older children at least, as well as adults, in this way.

MEATS of various kinds are all-important in many cases of artificial feeding of infants, whether in fluid or more substantial form. They should be neither too young nor too old. Both are indigestible, and do mischief each in its own way. Mature but still young meat is valuable in various forms. Beef, mutton and chicken may serve as types of all, and may be resorted to in rotation. Salt meats may sometimes vary the list. Pork is difficult and slow of digestion.

Common soup has already been alluded to. Decoctions of the above are familiar as *beef-tea*, *mutton-broth*, and *chicken tea*. Farinaceous or other addenda are sometimes employed.

Beef-extract (often misnamed beef tea) may be prepared fresh, or its partial equivalent obtained from a roast joint when cut. It is best made in a good sized clean bottle,

putting finely divided beef within it, corking tightly, and boiling the bottle in water for some time. The liquid is then poured off; a trifle of salt should be added. Salt put in at the beginning of decoction may become so concentrated as to render the product unfit for use; and even without this, the natural salines may occasionally do the same.

The *concentrated beef-extract* so commonly sold is, when not objectionable to the taste, of great use. In wafer capsules it may be made applicable in still other cases, perhaps. This is sold as Liebig's Extract of Beef, sometimes under other names. It is, however, usually more stimulant than nutritious, the albuminoids being found in but small amount. An exception exists in Johnston's Extract, which I now prescribe exclusively. It consists of the usual extract, made semi-solid by the addition of lean beef, dried and finely powdered, thus forming a really *concentrated food.* Two teaspoonfuls in a teacupful of water make an excellent broth.

"*Meat Peptones*" are solutions of beef artificially effected in the laboratory, by means of pepsin and hydrochloric acid at a temperature slightly higher than that of the body, viz.: 100° F., or even more; in other words, by "artificial digestion." If no free acid remain to act as a crude drug, these preparations may be used where the natural digestion entirely fails. The living but sick organs, however, must be cured, and thus induced to make their own pepsin, etc.; this, I hold to be the essential condition of complete success.

Dried Bullocks' Blood is now considerably employed as a form of concentrated nutriment. The glue-like fibrine is first separated, and the residue dried, forming dark red, thin, shining scales. Like the fresh blood it may be taken by the mouth or by enema, in all wasting diseases.

Cold infusion of beef, salted slightly, may prove agreeable as a diet drink when such temperature only is acceptable. The process of percolation, *a la café Française*, may be applied by non-metallic apparatus to finely divided meat, the product being kept surrounded by ice; or, being divided and pounded in a crash cloth, it may afterwards be subjected to a strong press, a little water added to the residue and pressed again, just as in the preparation of the fruit syrups.

A preparation of *calf's sweet-bread* (the pancreas), made in the same manner, will contain some of the digestive principles and powers of that important ally of the stomach, called, in a general way, *pancreatin;* this is capable of digesting fatty, starchy, and also albuminoid foods, mingled with it. A similar infusion of *fresh rennet* will contain a portion of *pepsin*, the important digestive principle of the stomach itself. Pancreatin co-operates with alkalies, and with the secretion of the liver, and is therefore adapted to faults of the later digestion; pepsin harmonizes with acids, and with the beginning of digestion. Dr. Duncan, of Chicago, distinguishes children in whom the former principles seem predominant, as "alkaline children," the latter as "acid children;" and considers that the alkaline

constitution suffers most from catarrhal diseases; the acid, from painful inflammations, etc. The alkaline tend to fat, the acid to emaciation; hence the former state, without excess, is desirable. It is attended with large size of the liver and smallness of stomach; just the reverse of the other, according to this authority.

Raw meat-juice may be obtained by chopping and pressing with a lemon squeezer. It is often useful. ***Meat, raw or cooked***, may be *scraped*, so as to afford nourishment for an infant; or it may be finely *hashed*, as if for sausage. The latter may be reinforced by potatoes, etc., when not contra-indicated by diarrhœa. The great danger is that comminution may be imperfect. This must be guarded against, as indigestion would result.

Damascene preserve consists of raw beef chopped and pounded, along with white sugar, until finely comminuted. This has proved a life-saver in many instances. The one doubt of its value lies in the possible presence of living parasitic germs (as of tape worm) in any form of raw meat.

Frying, as a method of cooking, is generally very objectionable; but meats *broiled* or *roasted*, are good; the latter, especially. A close utensil, such as a "Dutch oven," which retains every particle of vapor, is economical of the volatile principles, and hence secures the choicest product; which may then be employed in any of the ways herein alluded to. The same instrument bakes the best Indian corn bread. An excellent temptation to appetite is found, often, in a *wafer of beef*, the thickness of card

board, cut across the grain, carefully broiled, buttered and slightly salted; and for a little child, *very finely divided.*

Stews and *Fricassées* are adapted to those who can chew, when convalescent, and to whom the peculiar flavor of a roast may be disagreeable; or in the way of rotation, very fine hashes may suit some who cannot masticate.

Desiccated meats, i. e., with the moisture completely evaporated, may be sometimes utilized; being easily grated, and containing in this state, a large proportion of absolutely nutritious matter. This may be given like the beef-extract, in hot water, or dry, in a suitable vehicle, as the wafer, or jelly, or stewed fruit, which may be punctured to insert it; small masses at a time. Desiccated vegetables and fruit also find place in dietetics, but all kinds of vegetables are, as a rule, injurious in diarrhœa.

Any form of meat diet is of doubtful propriety, to say the least, in typhoid fever, when the urine is without sediment. And in ulceration of the bowels, any solid food may cause perforation, and fatal peritonitis; whilst ice-cream has killed a convalescent, by intestinal hæmorrhage.

Fish have a certain value in the dietetics of childhood, as well as of older persons. Fish without scales are to be generally eschewed, but this leaves a long list of scale-fish, which admirably fulfil the requirement of organic and inorganic elements of nutrition, especially in nervous exhaustion; phosphorus being prominent among the principles thus afforded—and in a state prepared for assimilation. Being easily picked to pieces, a young child can take it.

Rock-fish, boiled, and dressed with drawn butter, broiled or "planked" shad, perch, etc., etc., are prominent, hereabout; and the cosmopolitan "Digby herring" (a very small, smoked fish), eaten raw, or slightly broiled, often proves a capital appetizer.

Shell-fish, i. e., *Oysters* (rarely clams), are often a boon. The juice, or the soup of a plain stew, with cracker or otherwise, may be the initial form; afterwards, the tender portion of the oyster itself. In stewing, the juice is to be first cooked with milk, salt and butter, and the oysters added when it boils; letting them remain on the fire only until heated through. Thus, they remain tender.

Oyster-hash, very fine, made of the tender portions only of such stewed oysters, may be given when that form is most manageable. Even a fried oyster may sometimes be chewed very fine by the mother of a sick or badly nourished child, and prove in this state a grateful and digestible diet. The hard muscle, the so-called "heart," is discarded, if digestion be feeble.

One of the most precious hints I have ever received in the matter of diet, was derived from a half nourished babe, in the presence of a plate of raw oysters. It made such violent demonstrations of craving for them, that the mother, holding a fine one by the tough muscular portion, allowed the child to suck the remainder, which it thus demolished in a short time; and by acting on this hint, the difficulty in its case was bridged at once. I have since repeatedly prescribed the same, with excellent effect—even

in adults, who, whilst unable to *eat*, could yet *suck* a raw oyster.

Eggs in various forms, are another staple. They contain (the yolk especially), all the essentials of nutrition. In addition, the raw yolks are both a preventive and palliative, to some extent, of cough, sore throat of public speakers, &c. Beaten up with brandy, they are a potent remedy against hungry faintness, in many cases of over-worked mind and body; sometimes preferable to tea, coffee, or malt liquors. But to return to infants' diet.

Allusion has already been made to raw yolk and cream. It may be given by the mouth, a teaspoonful every half hour or hour, *as a dose*, when there is unwillingness to eat it. An enema of a wineglassful or less may be given every two or three hours, when it is refused otherwise; and it will nourish almost as well in this way; being fully absorbed by the rectal mucous membrane.

Hard-boiled yolk of egg is fairly digestible; and may be mashed with a little butter or cream, and salt, and given in doses. This, or any other semi-solid substance, may be given diluted with water, cream, etc.; or to older persons in the wafer, if not acceptable in the original form. Continuous, compulsory nourishment is in many low states of the system, an essential condition of saving life. Small in quantity, wholly and comprehensively nutritious, such doses are often particularly useful; and, in rotation with other articles, as (in the absence of fever, or at least, when the urine is capable of forming sediment), beef-tea, besides pre-

pared wheat or barley, etc , they may enable us to carry the patient over some very dangerous places.

In cough-cases, intestinal disturbances, &c , *white of egg with water*, kept cold by setting in a bowl of ice, and given in sips, is often a palatable demulcent and nourishing drink. The proportion is one egg to a half-teacupful of water Or, if a higher temperature be wished for, it may be first mixed with warm (not boiling) water, and kept in a warm water bath, on the stove or nursery lamp, but not hot enough to coagulate it. These solutions should be strained.

Egg-soup is the same as the last, with the addition of the partially beaten yolk, and in this case a little salt will be desirable, also crumb of bread, and a slight coagulation is proper, as representing a cooked food. Another good form is prepared by adding a slightly beaten egg to a teacupful of boiling milk, salting and pouring over a soda-cracker, whole or crumbled.

The ordinary *soft-boiled egg*, especially with bread-crumb and a little butter and salt, is a frequently available diet for young children.

Plain custard, i. e , egg, milk and sugar, without spices, may sometimes prove an agreeable form.

FRUITS, recent and dried, are useful adjuncts to other food, affording a vehicle, or it may be a dressing for less palatable things. Perfectly ripe, sound, well-flavored fruit, deprived of skin and core, is much more rarely hurtful than is often supposed. If, eaten with imperfect mastication it should prove indigestible (as ought to be expected),

attention to this point may obviate the trouble, and secure positive benefit. Milk should not be allowed with it, lest it curdle, and disagree. A very simple and easy method of administration consists in scraping the pulp with the end of a silver knife, and placing upon the child's tongue. There is a general laxative impression to be anticipated, however, from the use of fruit. Apples, bananas, and other familiar forms, eaten at bedtime, are a favorite resource with many costive persons. Baked apples, etc., are a standard food; minus skin and core. Dried figs or raisins roasted, or stewed in milk, have a value other than dietetic, in cases of immature gumboil, to which they may be usefully applied (within the mouth) as a poultice, after splitting. Again, ripe fruit may be mashed and strained through a coarse medium, as cotton lace, thoroughly cleansed from its stiffening material or sizing. Jellies may be prepared from this by the addition of sugar and gelatine, and kept ready for use. Orange-jelly is made by dissolving gelatine in hot water; adding sugar, making it a little too thick, then adding the orange-juice, and cooling. Other flavors are easily made in like manner. No metallic substance should, if avoidable, be brought in contact with the fruit. *Stewed fruits* are often a convenient, agreeable, and somewhat laxative diet—prunes especially; although I prefer the dry, uncooked prunes, freely eaten, for this purpose. *Canned fruit* is often a good substitute for the fresh, but glass or stone jars are better than metal cans. When fruit itself is forbidden, the juice may be used on bread, or in water,

or alone. The juices of new fruit, made into *syrup*, are of great value in the preparation of drinks for the sick. Strawberry syrup is particularly so. *New cider*, new wine, or other fresh natural juice, set in a bowl of ice, may often prove a grateful drink.

These may be varied occasionally with *toast-water*, preserved in like manner. This is good only when the untoasted portion does not come in contact with the water, and when the bread is really *toasted, not charred* in any degree. Slices as large as a man's thumb, of baker's bread a day old, toasted just brown on every side, are to be steeped in cold water until the latter is sufficiently colored; then carefully lifted out without breaking. This is real toast-water. "*Crust coffee*" resembles this, but is made with good crust of bread and hot water, and may be used as ordinary coffee. All bread is most wholesome at about the age above named.

Wheat coffee, *rye coffee*, etc., made of the roasted grain, so familiar in war times, may be used by the sick as substitutes for genuine coffee, with or without the addition of a trivial flavoring of the latter. Like the real coffee, and tea as well, they may be used hot, with or without sugar and cream; or, again, may be iced, as many epicures prefer in the use of these their favorite dietary stimuli.

The goal we seek in the case of infants who are incapable, from retarded dentition, of masticating the solid food which their age and size seem to require is, the completion of this process at as early a moment as possible; after which, we

may rest easy, in most cases, on the score of their nutrition, unless suffering from some fit of sickness.

Certain dietetic preparations, as Castillon's Powder (often corruptly called Castilian Powders), are composed of farinaceous substances, with an appreciable quantum of calcareous matter. My preference is decidedly in favor of giving the food and medicine separately. Ordinarily, I find satisfactory results, i. e. the speedy cropping out of a full set of teeth, from persistent attention to the foregoing considerations as to diet, with a weekly dose of *Calcarea phosphorica*, first decimal trituration, at bedtime. When the gums begin to swell, like the buds of a tree in the spring, the medicine has done its work, and may properly be withdrawn. Should the irritation be excessive, *Gelsemium* may have to be given, or perphaps *Aconite*, *Chamomilla*, or *Belladonna* instead. But the withdrawal of the nutrient stimulus will commonly settle all trouble shortly.

In this connection, I cannot but say that with this policy I am able almost uniformly to avoid lancing the gums. I question, indeed, if this be not essentially erroneous, as liable to injure the matrix of the growing enamel, and as causing inflammation in the track of the lancet, without hastening the eruption of the badly nourished tooth a single hour; only excepting those cases in which, the child being convulsed, we find a molar half covered by the gum tissue, this being the *punctum saliens* of the spasm, or other brain trouble.

A moment's reflection will show that as *the tooth is erupted because it grows*, particularly at the root, where it pushes against the jaw-bone, therefore, lancing attacks the trouble at the wrong end; and that the true policy is to stimulate the nutrition of the tooth at its papillary or root portion, whereby the whole tooth will be prospered, becoming a normal, and no longer in any degree a foreign body.

Persistent crying of an infant is always a sign that something is wrong. It is too hot, or too cold, or wet, or soiled, or hungry, or sleepy, or frightened, or in pain of some kind, which should be promptly corrected.

"Pinched by colic, or tortured by pins," or by "prickly heat," or in some other way sick, or injured, it may be, and the nurse, the mother and the doctor combined, may be needed, to determine what is the matter. I have known of a young babe suffering for days with an unrecognized fracture of the clavicle (collar bone); and I frequently see a lady, crippled for life by a dislocated hip, also occurring in early infancy, without detection. If none of these particular causes exist, this fact remains—a so-called "cross baby" is a *sick* baby, needing prompt, skilful and loving attention and care.

When the child is very young, it is easily frightened by noise, by rough handling, by washing, and even by its own automatic motions. In this case, it may often be quickly soothed by wrapping it up somewhat firmly, compressing the arms against the body, and suppressing the wild motions

of all its limbs. Jolting and trotting commonly aggravate the trouble. In other cases a skilful use of medicine is needful; as *Acon*, *Ferrum phos*, *Bell.*, *Cham.*, *Magnes. phos. etc.*, *etc.*

For night use and for travelling it is well to be provided with the *Asbestos Alcohol Stove*, which, when packed, occupies but *a few inches of space*, yet is capable of the quick and efficient cooking of a considerable quantity of food at a time.

THE END.

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